

IN THE CLAIMS:

B2 1. (Currently Amended) Method for real-time control of the fabrication of a thin-film structure comprising a substrate by ellipsometric measurement in which:

- variables directly linked to the ellipsometric ratio $\rho = \tan\Psi \exp(i\Delta)$ are measured; and

- the said variables ^{which} are compared with reference values,

^{light beam} ~~characterized in that~~ ^{by who} wherein the comparison relates to the ^{what length} length of the path traveled at a time t in the plane of the variables with respect to an initial point at time t_0 , for each layer participating in the thin-film ~~structure~~ structure.

2. (Currently Amended) Control method according to Claim 1, ~~characterized in that~~ wherein the said variables are a combination of the parameters Ψ and Δ .

3. (Currently Amended) Control method according to Claim 1, ~~characterized in that~~ wherein the said variables are a combination of trigonometric functions of the parameters Ψ and Δ .

4. (Currently Amended) Control method according to Claim 1, ~~characterized in that~~ wherein the ellipsometric measurement is one with phase modulation.

5. (Currently Amended) Control method according to Claim 4, ~~characterized~~
~~in that~~ wherein the measured variables are, respectively:

$I_s = (\sin 2\Psi \sin \Delta)$ and

$I_c = (\sin 2\Psi \cos \Delta)$ or $I_c = \cos 2\Psi$.

6. (Currently Amended) Control method according to Claim 1, ~~characterized~~
~~in that~~ wherein the ellipsometric measurement is carried out using the ~~method called~~
"rotating polarizer" method.

7. (Currently Amended) Control method according to Claim 6, ~~characterized in~~
~~that~~ wherein the measured variables are $\tan \Psi$ and $\cos \Delta$.

8. (Currently Amended) Control method according to Claim 1, ~~characterized~~
~~in that~~ wherein the ellipsometric measurement is a multiwavelength measurement.

9. (Currently Amended) Control method according to Claim 1, ~~characterized~~
~~in that~~ wherein the reference values form a theoretically determined path.

10. (Currently Amended) Control method according to Claim 1, ~~characterized~~
~~in that~~ wherein the reference values form an experimentally determined path.

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11. (Currently Amended) Control method according to Claim 1, ~~characterized~~
~~in that~~ wherein the reference values are discrete points corresponding to the instants
of fabrication of the thin layers with respect to the time t_0 .

12. (Currently Amended) Control method according to Claim 1, ~~characterized~~
~~in that~~ wherein the path traveled is adjusted by a polynomial of order between 1 and
5.

13. (Currently Amended) Control method according to Claim 1, ~~characterized~~
~~in that~~ wherein the reference values are determined by measurement, using the
succession of the following steps:

- measurement of a known layer on a simple substrate;
- measurement of the same known layer on an industrial substrate;
- measurement of the thin-film structure to be controlled.

14. (Currently Amended) Control method according to Claim 2, ~~characterized~~
~~in that~~ wherein the ellipsometric measurement is one with phase modulation.

15. (Currently Amended) Control method according to Claim 3, ~~characterized~~
~~in that~~ wherein the ellipsometric measurement is one with phase modulation.

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16. (Currently Amended) Control method according to Claim 14,
~~characterized in that~~ wherein the measured variables are, respectively:

$$I_s = (\sin 2\Psi \sin \Delta) \text{ and}$$

$$I_c = (\sin 2\Psi \cos \Delta) \text{ or } I_c = \cos 2\Psi.$$

17. (Currently Amended) Control method according to Claim ~~14~~ 15,
~~characterized in that~~ wherein the measured variables are, respectively:

$$I_s = (\sin 2\Psi \sin \Delta) \text{ and}$$

$$I_c = (\sin 2\Psi \cos \Delta) \text{ or } I_c = \cos 2\Psi.$$

18. (Currently Amended) Control method according to Claim 2, ~~characterized~~
~~in that~~ wherein the ellipsometric measurement is carried out using the ~~method called~~
"rotating polarizer" method.

19. (Currently Amended) Control method according to Claim 3, ~~characterized~~
~~in that~~ wherein the ellipsometric measurement is carried out using the ~~method called~~
"rotating polarizer" method.

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20. (Currently Amended) Control method according to Claim 18,
~~characterized in that~~ wherein the measured variables are $\tan \Psi$ and $\cos \Delta$.

21. (Currently Amended) Control method according to Claim 19,
~~characterized in that~~ wherein the measured variables are $\tan \Psi$ and $\cos \Delta$.

22. (Currently Amended) Control method according to Claim 2, ~~characterized~~
~~in that~~ wherein the ellipsometric measurement is a multiwavelength measurement.

23. (Currently Amended) Control method according to Claim 3, ~~characterized~~
~~in that~~ wherein the ellipsometric measurement is a multiwavelength measurement.

24. (Currently Amended) Control method according to Claim 2, ~~characterized~~
~~in that~~ wherein the reference values form a theoretically determined path.

25. (Currently Amended) Control method according to Claim 3, ~~characterized~~
~~in that~~ wherein the reference values form a theoretically determined path.

26. (Currently Amended) Control method according to Claim 2, ~~characterized~~
~~in that~~ wherein the reference values form an experimentally determined path.

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27. (Currently Amended) Control method according to Claim 3, characterized in that wherein the reference values form an experimentally determined path.

28. (Currently Amended) Control method according to Claim 2, characterized in that wherein the reference values are discrete points corresponding to the instants of fabrication of the thin layers with respect to the time t_0 .

29. (Currently Amended) Control method according to Claim 3, characterized in that wherein the reference values are discrete points corresponding to the instants of fabrication of the thin layers with respect to the time t_0 .

30. (Currently Amended) Control method according to Claim 2, characterized in that wherein the path traveled is adjusted by a polynomial of order between 1 and 5.

31. (Currently Amended) Control method according to Claim 3, characterized in that wherein the path traveled is adjusted by a polynomial of order between 1 and 5.

32. (Currently Amended) Control method according to Claim 2, characterized in that wherein the reference values are determined by measurement, using the succession of the following steps:

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- measurement of a known layer on a simple substrate;
 - measurement of the same known layer on an industrial substrate;
 - measurement of the thin-film structure to be controlled.

33. (Currently Amended) Control method according to Claim 3, characterized in that wherein the reference values are determined by measurement, using the succession of the following steps:

- measurement of a known layer on a simple substrate;
 - measurement of the same known layer on an industrial substrate;
 - measurement of the thin-film structure to be controlled.
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